TREE/SHRUB ESTABLISHMENT

(Acre)
Code 612

Natural Resources Conservation Service
Conservation Practice Standard

I. Definition

To establish woody plants by planting or seeding.

II. Purpose

This practice may be applied as part of a conservation management system to support one or more of the following purposes:

- To establish woody plants for forest products.
- To provide erosion control and energy conservation.
- To reduce air pollution and for uptake of soil and water-borne chemicals and nutrients.
- To beautify an area.
- To provide wildlife habitat.
- To restore woody plant communities.

III. Conditions Where Practice Applies

In open fields, in under stocked woodland, beneath less desirable tree species, or on other areas suited for woody plants.

IV. Federal, State, and Local Laws

Users of this standard should be aware of potentially applicable federal, state and local laws, rules, regulations or permit requirements governing Tree/Shrub Establishment. This standard does not contain the text of federal, state, or local laws.

V. Criteria

Species will be adapted to soil-site conditions. Native species are preferred.

Species with the identified potential to be invasive shall not be planted.

Species will be suitable for the planned purpose.

Planting or seeding rates will be adequate to accomplish the planned purpose.

Trees/shrubs will be planted in early spring as weather permits. Seeding will be done in the season most suitable for germination.

For direct seeding and planting techniques, species selection, care of seedlings and equipment, see Wisconsin Forestry Technical Notes WI-1, Native Tree and Shrub Planting Recommendations for Wisconsin, and WI-2, Tree and Shrub Establishment.

Seed and seedlings will be properly handled prior to and during planting to ensure that planted materials have an acceptable rate of survival.

Only viable, high quality, and adapted planting stock or seed will be used. Planting stock and seed sources from within the Lake States Region are recommended.

Site preparation shall be sufficient for establishment and growth of selected species. See NRCS Field Office Technical Guide (FOTG) Section IV Standard 490, Woodland Site Improvement. In areas where brush, sod, or weeds may cause severe competition for moisture, it may be necessary to reduce competing vegetation by:

- Scalping with attachment on planter, or by hand.
- Furrowing or strip tillage with a plow, disk, or similar implement.
- Chemically treating areas of heavy sod. This method eliminates the need for scalping or furrowing, leaving the soil surface undisturbed, a critical factor on erodible sites or soils with thin surface layers.
- Applying mulch, fabric, or similar weed barriers.

Cover crops or critical area plantings may need to be established to protect the soil surface until trees/shrubs are established and provide canopy closure.

On very wet sites subject to ponding, to prevent drown-out, plant on prepared ridges. Ridging should be done a year ahead of planting. Use hand planting on "cradle-knolls" on heavy soils, where suitable.

Divert or filter runoff from barnyards, manure disposal facilities, and crop fields to prevent damage to trees and shrubs.

Adequate native seed or advanced reproduction using native seed needs to be present or provided for when using natural regeneration to establish a stand.

Timing, equipment type, and the use of equipment will be appropriate for the site and soil conditions.

The acceptability and timing of coppice regeneration shall be based on species, age, and diameter of the stem/trunk.

The planting will be protected from adverse impacts from livestock including grazing or trampling.

Firebreaks and access roads will be provided as needed.

Control of deer, rabbit, gopher, and mouse damage may be needed to ensure establishment by:

- The use of chemical repellants applied to trees/shrubs or soil.
- Mechanical protection, such as wire or plastic enclosures, wrapping, etc.
- Controlling weeds that can harbor animals.
- Protecting or providing habitat for predators such as hawks, owls, coyotes, etc.
- Avoiding especially palatable tree/shrub species in areas of high animal pest concentration.

VI. Considerations

Additional recommendations relating to design that may enhance the use of, or avoid problems with, this practice but are not required to ensure its basic conservation functions are as follows.

A. When under planting, trees should be planted sufficiently in advance of overstory removal to ensure full establishment.

B. Treat active gullies before planting. Seeds or seedlings will be planted no closer than 50 feet to grassed channels.

C. Prescribed burning may be required for natural regeneration of serotinous cone species and for site preparation for other species.

D. All planting stock and seed should be purchased from nurseries that are known to be using locally adapted seed, seedlings, or cuttings (Lake States Origin). Southern seed sources are seldom hardy in Wisconsin. Plant materials that have been selected and tested in tree improvement programs are preferred.

E. Residual chemical carryover in agricultural fields should be considered prior to planting.

F. Density will vary with species, intent of the planting, method of planting, soil site conditions, and other factors.

G. Plantings for erosion control and reforestation are generally less than or equal to 1,100 stems per acre for transplants and 3,000 first year germinates for direct seeding.

VII. Plans and Specifications

Specifications for applying this practice shall be prepared for each site and recorded in the conservation plan and/or on Wisconsin Job Sheet 143, Tree Planting.

Documentation will include site preparation requirements, tree/shrub species planned, spacing, number of trees/shrubs per acre or seeding rates, purpose of planting, planting or seeding methods, cultural practices, maintenance requirements, and location on the conservation plan map.

VIII. Operation and Maintenance

An operation and maintenance plan shall be developed that is consistent with the purpose of this practice, intended life of the components, and criteria for design. The plan shall include but is not limited to the following.

A. To insure adequate survival of planted or direct-seeded species, it may be necessary to control competing vegetation. This can be accomplished by:

   - proper site preparation,
   - cultivation with various implements,
   - mowing competing weeds and grasses, and
   - use of approved herbicides.

   Note: The first three years after establishment are critical

B. Replanting will be required when survival is inadequate.

C. Trees and shrubs will be protected from fire, insects, disease, and animals until established.

IX. References

USDA, NRCS Wisconsin Field Office Technical Guide (FOTG), Section IV, Practice Standards and Specifications.

USDA, NRCS, Wisconsin Forestry Technical Notes WI-1, Native Tree and Shrub Planting Recommendations for Wisconsin, and WI-2, Tree and Shrub Establishment.

USDA, NRCS, Wisconsin Job Sheet 143, Tree Planting.

Smith, David Martyn, 1962. The Practice of Silviculture. 578 pp.

U.S. Department of Agriculture Forest Service, 1965. Silvics of Forest Trees of the United States, Agriculture Handbook No. 271. 762 pp.

Stoddard, Charles H., 1968. Essentials of Forestry Practice. 362 pp.